

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

IMRA AMERICA, INC., a Michigan
corporation,

Plaintiff/Counterdefendant,

v.

IPG PHOTONICS CORPORATION, a
Delaware corporation,

Defendant/Counterclaimant.

AND RELATED COUNTERCLAIMS

Case No.: 2:06-CV-15139

Judge: Hon. Anna Diggs Taylor

Magistrate: Hon. Mona K. Majzoub

**PLAINTIFF IMRA AMERICA INC.'S
BRIEF ON CLAIM CONSTRUCTION**

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I. INTRODUCTION

This submission sets forth Plaintiff IMRA America Inc.'s (IMRA) claim constructions for U.S. Patent No. 5,818,630 (the '630 patent).¹ IMRA submits that only one of the terms from the '630 patent needs construction by this Court. The remaining terms do not have to be construed and the plain and ordinary meaning of these other terms should be utilized.

II. THE LAW OF CLAIM CONSTRUCTION

According to the U.S. Supreme Court, claim construction is a question of law for the Court. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996). The Federal Circuit has developed an extensive body of law governing how claims are to be construed. The principles of Federal Circuit law that are relevant to claim construction in this case are summarized below for the Court's convenience.

A. **There Is No Obligation To Construe Every Claim Limitation**

It is well established that "district courts are not (and should not be) required to construe every limitation present in a patent's assorted claims." *02 Micro Int'l Ltd. v. Beyond Innovation Tech Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008). Also in *Orion IP, LLC v. Staples, Inc.*, 406 F.Supp.2d 717, 738 (E.D. Tex. 2005), the Court stated: "[N]ot every word requires a construction." The only terms that need to be construed are those "that are in controversy, and only to the extent necessary to resolve the controversy." *Vivid Techs., Inc. v. Am. Sci. Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). Moreover, the Federal Circuit has explained that:

The *Markman* decisions do not hold that the trial judge must repeat or restate every claim term in order to comply with the ruling that claim construction is for the court. Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the

¹ A copy of the '630 patent is attached as Exhibit A.

claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.

U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997) (emphasis added). As discussed in more detail below, IMRA believes that there is only one term in the '630 patent that needs construction by this Court. The additional terms sought to be construed by IPG do not need construction since their meanings are readily understood by persons of ordinary skill in the art.²

B. Claim Construction Starts With The Term's Ordinary Meaning

Claim construction begins with and focuses on the words of the claim. *See Bell Comms. Research, Inc. v. Vitalink Comms. Corp.*, 55 F.3d 615, 619-20 (Fed. Cir. 1995). The Court's starting point is to give each disputed term its plain and ordinary meaning as understood by persons of ordinary skill in the art "after reading the entire patent." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (*en banc*). Moreover, the Federal Circuit has emphasized that there "is a heavy presumption that the terms used in claims mean what they say and have the [plain and] ordinary meaning that would be attributed to those words by persons skilled in the relevant art." *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 874-75 (Fed. Cir. 2004) (emphasis added) (citation omitted); *see Housey Pharms., Inc. v. Astrazeneca UK Ltd.*, 366 F.3d 1348, 1352 (Fed. Cir. 2004).

C. The Court Should Rely First and Foremost On The Intrinsic Evidence

For purposes of claim construction, the Court should rely first and foremost on evidence intrinsic to the patent, namely the patent claims, specification and prosecution history. *Teleflex, Inc. v. Ficosa North Am, Corp.*, 299 F.3d 1313, 1324-25 (Fed. Cir. 2002) (citing *Vitronics Corp.*

² The parties have also agreed to constructions of several other terms in the claims. These are set forth in the attached copy of the Joint Claim Construction Statement and do not need to be discussed in this Brief. *See Exhibit B.*

v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (stating that such evidence is "the most significant source of the legally operative meaning of the disputed claim language"). To determine the meaning of the claim terms, the Court must begin with the words of the claims themselves. *Id.* Unless the specification or prosecution history indicate otherwise, claim terms should be given their plain and ordinary meaning that a person of ordinary skill in the art would ascribe to them. *Id.*; *Texas Digital Sys. Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1204-05 (Fed. Cir. 2002); *Phillips*, 415 F.3d at 1321.

In some instances, in order for the Court to more fully understand the underlying subject matter, the Court can rely on extrinsic evidence. This includes dictionaries, treatises and expert testimony. The general meanings gleaned from extrinsic sources, however, must always be compared against the use of the terms in context in the intrinsic record (i.e., in the patent claims, specification, and prosecution history.) *Brookhill-Wilk I, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1300 (Fed. Cir. 2003). Extrinsic evidence "may not be used to vary, contradict, expand, or limit the claim language from how it is defined, even by implication, in the specification or file history." *Bell Atlantic Network Services, Inc. v. Covad Communs. Group, Inc.*, 262 F.2d 1258, 1266 (Fed. Cir. 2001).

D. The Court Should Not Import Limitations From The Specification Into The Claims, Or Limit The Claims To Only The Described Embodiments

The specification in particular is the "single best guide to the meaning of a disputed term." *Lydall Thermal/Acoustical Inc. v. Federal Mogul Corp.*, 2009 W.L. 2893190 at * 4 (Fed. Cir.). However, the Federal Circuit has warned repeatedly against importing "limitations from the specification into the claim." *Phillips*, 413 F.3d at 1323. For instance, although the

specification often describes very specific embodiments of the invention, it is improper to confine the claims to those examples. *Id.*, 415 F.3d at 1323.

Ultimately, after taking all of this into consideration, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Phillips*, 415 F.3d at 1316. IMRA submits that its proposed claim construction discussed below stays true to the claim language of the '630 patent, and should be adopted by the Court.

III. FACTUAL BACKGROUND

The '630 patent owned by Plaintiff IMRA issued on October 6, 1998, based on an application filed in June 1997. The patent relates to a certain type of laser amplification system and was invented by two Ph.D. scientists at IMRA in Ann Arbor, Michigan.

The invention of the '630 patent was a revolutionary breakthrough in the field of fiber lasers, fiber amplifiers and related components. It enabled lasers to achieve substantial increases in power with high light beam quality. This invention, in turn, allows fiber lasers to be used in areas where they could not be used previously and has saved companies substantial time and expense.

IMRA, a research oriented company with about 50 employees, has secured over 100 U.S. patents from its research. In addition to commercializing the technology of its inventions, IMRA also licenses its technology to other companies. Virtually all of the significant companies in the fiber laser industry, except for the defendant IPG, have taken licenses under the '630 patent.

Lasers were first conceived in the late 1950s.³ They make use of the energy from light beams which are made up of particles called photons. The photons in the light beam are

³ "LASER" is an acronym for "Light Amplification by Stimulated Emission of Radiation."

energized and accelerated to produce a usable output. The power and quality of the light beam are keys to the use of lasers.

There are numerous types of lasers today, including (1) gas lasers (e.g. carbon dioxide lasers), (2) solid state lasers (e.g. ruby and sapphire lasers) and (3) fiber lasers. Lasers are in common use in a virtually limitless variety of applications. Lasers have significant use, for example, (a) in medicine (eye treatment, skin treatment, surgery), (b) industry (cutting, welding), (c) defense (missile defenses), (d) commercial products (printers, CDs, barcode readers, pointers) and (e) laser lighting displays (laser light shows). Low power lasers are used in laser pointers and DVD players. Higher powered lasers are used for micro machining. Very high power lasers can be utilized to cut, weld and drill metals and other materials and can do so more easily and economically than earlier lasers. The use of fiber lasers is faster and less expensive than previous ways to accomplish these same results, including with the use of other lasers.

Fiber lasers get their name because they utilize a long thin strand of glass fiber about the diameter of pencil lead or even smaller. Light travels along the glass fiber and is excited and possibly amplified (i.e. increased in intensity) before it is focused at the end.

IV. THE '630 PATENT

IMRA's U.S. Patent No. 5,818,630 provides an improved and revolutionary fiber laser. The patented invention allows fiber laser manufacturers to produce more precise and higher power fiber lasers. The invention has increased the use of lasers in general and allows use of fiber lasers in many more applications.

Fiber lasers have the advantage of increased ruggedness, higher efficiency, lower operating cost, and increased compactness over gas and solid state lasers. The primary problem

with early fiber lasers was the low power levels which lagged below the other types of lasers. In the early 1990s before the '630 invention, fiber laser power levels were only on the order of 1-10 Watts.⁴

The '630 invention provides for a more precise and higher quality light beam from a fiber laser at high power. The smaller the focus spot of a laser, the more precise it is and the more useful it is for many applications. Using the '630 patented technology, fiber lasers with high beam quality and power outputs of 1000 Watts to 10,000 Watts are now commercially available. High beam quality combined with the high power capabilities of fiber lasers have made fiber lasers which incorporate the '630 patented technology a commercial success.

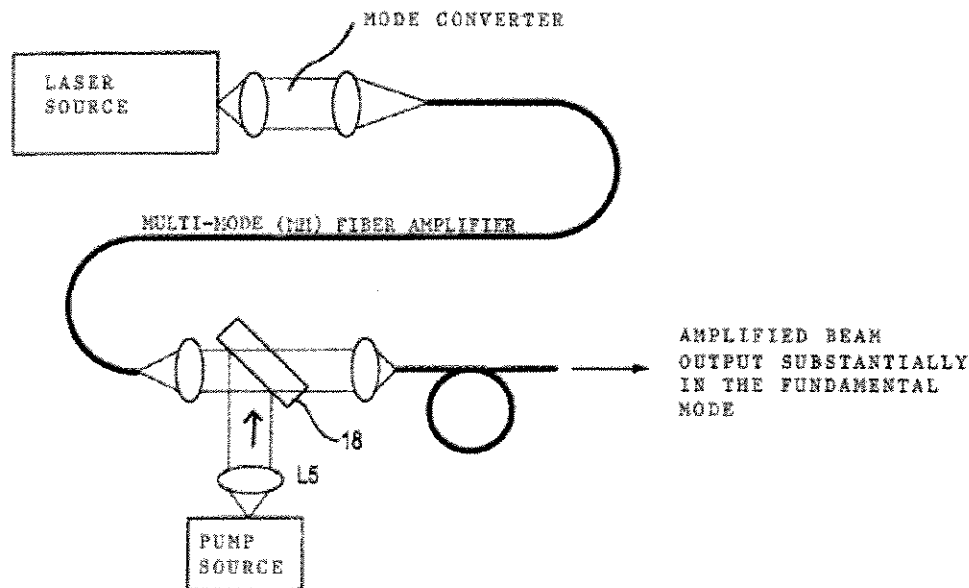
The '630 patent has 49 claims, only Claim 1 of which is independent. Claim 1, set forth below, is the broadest claims and includes the one term that IMRA believes needs to be construed by the Court (the term is underlined below):

1. An optical amplification system, comprising:
 - a laser source generating an input beam having a nearly diffraction limited mode;
 - a multi-mode fiber amplifier;
 - a **mode converter** receiving the input beam and converting the mode of the input beam to match a fundamental mode of the multi-mode fiber amplifier, and providing a mode-converted input beam to said multi-mode fiber amplifier; and
 - a pump source coupled to said multi-mode fiber amplifier, said pump optically pumping said multi-mode fiber amplifier, said multi-mode amplifier providing at an output thereof an amplified beam substantially in the fundamental mode.

⁴ A Watt is a unit of power.

In general terms, the '630 patent invention is an optical amplification system which uses a multi-mode (MM) fiber amplifier. The laser source provides an input beam having a nearly diffraction limited mode for the MM fiber amplifier.⁵ The input beam mode is converted to match a fundamental mode of the MM fiber amplifier and then provided to it. A "pump" source is coupled to the MM fiber amplifier to optically pump the multi-mode fiber amplifier. Their system provides an amplified beam substantially in the fundamental mode.

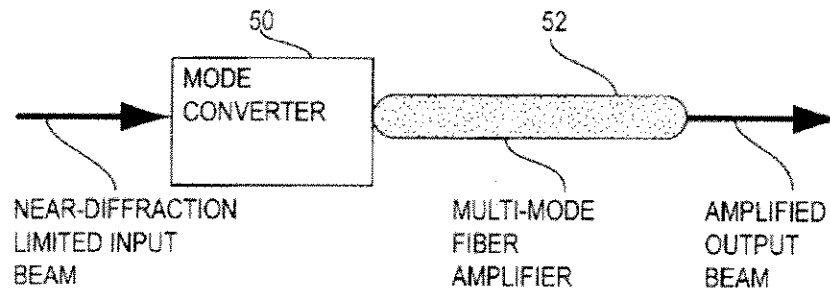
Set forth below is a schematic diagram of one embodiment of the invention. The diagram is Figure 1 of the '630 patent with reference names added to match the above description:



A more general embodiment of the invention is schematically illustrated in Figure 5 from the '630 patent:

⁵ Light behaves as a wave and travels through fibers in various "modes". The lowest order of the modes is called the "fundamental" mode. Single mode (SM) optical fibers force the light to remain in a single mode. Multi-mode (MM) fibers allow the light to travel through the fiber in many modes.

FIG. 5



V. TERM TO BE CONSTRUED: “MODE CONVERTER”

IMRA believes that the Court only needs to construe one claim term from the '630 patent, namely the term “**mode converter.**” The parties’ proposed constructions for this term are set forth below, side-by-side.

IMRA'S PROPOSED CONSTRUCTION	IPG'S PROPOSED CONSTRUCTION
An element capable of matching the mode of a multi-mode amplifier fiber.	An optical imaging system, such as a lens system, a section of tapered fiber, or a combination thereof, capable of matching the mode of the multi-mode fiber amplifier.

The patent claims themselves provide substantial guidance as to the meaning of claim terms. *Phillips*, 415 F.3d at 1314. Claim 1 recites, in pertinent part:

a **mode converter** receiving the input beam and converting the mode of the input beam to match a fundamental mode of the multi-mode fiber amplifier, and providing a mode-converted input beam to said multi-mode fiber amplifier.
(Col. 13, lines 17-20 (emphasis added).)

As shown by the claim language itself, no particular structure is required for the recited “mode converter.” Rather, any element capable of matching the mode of a multi-mode amplifier fiber, regardless of its structure, can be a mode converter as recited in Claim 1.

The claims “must be read in view of the specification, of which they are a part.” *Phillips*, 415 F.3d at 1315 (quoting *Markman*, 52 F.3d at 979). Indeed,

[t]he descriptive part of the specification aids in ascertaining the scope and meaning of the claims inasmuch as the words of the claims must be based on the description. The specification is, thus, the primary basis for construing the claims.

Id. at 1315 (quoting *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448,452 (Fed. Cir. 1985)). Here, IMRA’s proposed construction of “mode converter” comes directly from the ’630 patent specification, which states, “The mode-converter 50 can consist of any type of optical imaging system **capable of matching the mode of the MM amplifier 52**” (Col. 10, lines 26-28 (emphasis added).)

The remainder of the ’630 patent specification confirms that the patentee intended the term “mode converter” to apply broadly to any element capable of matching the mode of a multi-mode amplifier fiber. Figures 5, 6, 11 and 12 of the patent, for example, each portray a “mode converter” using a generic box, conveying that any structure may be used. (See Figs. 5, 6, 11 and 12 (element 50).) Moreover, a claim construction that excludes a preferred embodiment, such as the preferred embodiments of Figures 5, 6, 11 and 12, “is rarely, if ever, correct and would require highly persuasive evidentiary support....” *Vitronics Corp. v. Conceptronics, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

It is apparent that neither the claim language nor the written description of the ’630 patent requires any particular structure to accomplish the actions of the recited mode converter. Likewise, neither the claim language nor the written description of the patent excludes any particular type of structure to accomplish the actions listed above for the recited mode converter. Simply put, a mode converter is anything – i.e. an “element” – that accomplishes the matching of

the mode of the nearly diffraction limited input beam with the fundamental mode of the multi-mode fiber amplifier.

Although the intrinsic evidence is clear and nothing further is needed on the construction of “mode converter,” a Declaration of Dr. Wayne H. Knox is being submitted with this Brief. (Exhibit C.) Dr. Knox is a professor and noted expert in the laser and optic fields. In accordance with Dr. Knox's testimony, persons of ordinary skill in the art reading the '630 patent disclosure at the time the patent application was filed would interpret the claim term to have the meaning set forth above. (Knox Decl., Exhibit C, ¶7.)

IPG's proposed construction is incorrect. IPG concedes, as it must, that the definition of “mode converter” calls for an element “capable of matching the mode of the multi-mode fiber amplifier.” But IPG also adds in additional requirements not called for by the language of the patent claims or the '630 patent specification.

Most notably, IPG's definition introduces the requirement that a “mode converter” also be “an optical imaging system.” This position is inconsistent with the language of Claim 1, which recites no such a requirement. It is also inconsistent with the patent specification, which expressly calls out “an optical imaging system” as *an example* of the recited mode converter. Specifically: “[t]he mode-converter 50 **can consist** of any type of optical imaging system capable of matching the mode of the MM amplifier 52.” (Col. 10, lines 26-28.) The patent specification thus makes clear that a “mode converter” can be an optical imaging system. But it does not state that a mode converter must be an optical imaging system. Nor would a person of ordinary skill in the art in 1997 interpret the claim that way. (Knox Decl., Exhibit C, ¶8-9.)

The specification elaborates on this point, stating that “[f]or example, a lens system [a type of optical imaging system] may be employed.” (Col. 10, line 28.) A lens system

embodiment for the mode converter is also shown, for example, in Fig. 1 of the patent (element 14 and lenses L1 and L2) and Fig. 10 (lenses L1 and L2). There is no dispute that these “optical imaging system” embodiments of a mode converter fall within the definition of “mode converter” as recited in Claim 1. IPG’s error is in interpreting an exemplary type of structure (an optical imaging system) into the meaning of the more general term “mode converter.” It is well established that limitations from preferred embodiments that are not expressly recited in the claims are not ordinarily to be read into the claims. *Phillips*, 415 F.3d at 1323 (“although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments”).

Dependent Claims 17, 18, 50 and 51 of the ’630 patent further demonstrate that the “mode converter” limitation should be interpreted broadly. Claim 17 expressly recites a mode converter embodiment in the form of a bulk-optics imaging system. (*See* Col. 14, lines 18-20.) Claim 18 recites a mode converter embodiment in the form of a tapered single-mode fiber”). (*See* Col. 14, lines 21-23.) Claim 19 recites an embodiment in the form of a combination of a bulk imaging system and a tapered single-mode fiber. Claims 50 and 51 recite embodiments that include an optical fiber spliced to an input of the multimode fiber. (*See* U.S. 5,818,630 C1 at col. 1, lines 21-27.) The meaning of “mode converter” in Claim 1 should be interpreted broadly enough to encompass each of these exemplary embodiments. *Phillips*, 415 F.3d at 1315 (“the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim”).

The intent of IPG in proposing its definition is clear. IPG seeks to secure a narrow construction of the term “mode converter” (as it does with other terms discussed below), in the hopes of fabricating a non-infringement argument to escape liability under the ’630 patent. Such

a construction, however, is directly contrary to the intrinsic evidence (the claims and the patent specification) and is contrary to claim construction legal principles which prohibit importing limitations from the specification into the claims.

VI. THE ADDITIONAL TERMS DESIGNATED BY IPG DO NOT NEED CONSTRUCTION

IPG seeks to have the Court ascribe special meanings to three other terms of Claim 1.⁶

These are:

- (1) “converting the mode of the input beam to match a fundamental mode of the multi-mode fiber amplifier;”
- (2) “mode-converted input beam;” and
- (3) “an amplified beam substantially in the fundamental mode.”

To put these three claim terms in context, Claim 1 is recited below with these terms highlighted (along with the “mode converter” term discussed above);

1. An optical amplification system, comprising:
 - a laser source generating an input beam having a nearly diffraction limited mode;
 - a multi-mode fiber amplifier;
 - a **mode converter** receiving the input beam and converting the mode of the input beam to match a fundamental mode of the multi-mode fiber amplifier, and providing a mode-converted input beam to said multi-mode fiber amplifier; and
 - a pump source coupled to said multi-mode fiber amplifier, said pump optically pumping said multi-mode fiber amplifier, said

⁶ There are two terms in Claim 1 and two terms in Claim 24 for which the parties have agreed to definitions to be used in this case. These terms are: (i) multi-mode fiber amplifier; (2) multi-mode fiber; (3) mode filter; and (4) mode-filtered beam. The agreed-upon constructions of these terms are contained in the attached Joint Claim Construction Statement (Doc. 78). (Exhibit B.)

multi-mode amplifier providing at an output thereof an amplified beam substantially in the fundamental mode.

IMRA believes that these three claim terms need no construction. The plain and ordinary meaning of each of these terms would have been clear to a person of ordinary skill in the art in 1997, and it is clear in the patent that the plain and ordinary meaning is intended to apply.⁷

A. “Converting the mode of the input beam to match a fundamental mode of the multi-mode fiber amplifier”

This claim term needs no construction. The plain and ordinary meaning would have been clear to a person of ordinary skill in the art in 1997, and it is clear in the patent that the plain and ordinary meaning is intended to apply. (See, e.g., Col. 6, lines 6-8; Col. 6, lines 33-44; Col. 7, lines 6-14; Col. 10, lines 19-33; Figs. 1, 5-7, and 9-12; Claims 1, 17-19, and 50-51; Knox Decl., Exhibit C, ¶10.

IPG requests that the Court construe this claim language to mean:

“converting the mode of the input beam to cause it to match a fundamental mode of the multi-mode fiber amplifier.”

It can be seen that IPG’s proposed construction is hardly a definition at all. Below is IPG’s proposed construction with the words from the claim term highlighted:

“converting the mode of the input beam to cause it to match a fundamental mode of the multi-mode fiber amplifier.”

Where Claim 1 requires the mode of the input beam to be converted “to match” a fundamental mode of the multi-mode fiber amplifier, IPG’s proposed definition also requires that the

⁷ Although the intrinsic evidence is clear and nothing further is believed needed on the construction of these terms, the Declaration of Dr. Wayne H. Knox that is being submitted with this Brief supports and confirms IMRA’s position. In accordance with Dr. Knox’s testimony, persons of ordinary skill in the art reading the ’630 patent disclosure at the time the patent application was filed would construe these three to have their plain and ordinary meanings. (See Exhibit C.)

converting of the mode of the input beam “cause” the mode of the input beam to match. Such a modification is improper.

First, there is a heavy presumption that the plain and ordinary meaning of claim language applies. *See Phillips*, 415 F.3d at 1312; *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313 (Fed. Cir. 2002); *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1341 (Fed. Cir. 2001); *Johnson Worldwide Assocs. v. Zebco Corp.*, 175 F.3d 985, 989 (Fed. Cir. 1999). Through its proposed definition, IPG concedes that each word in this claim term has a plain and ordinary meaning that is understood to a person of ordinary skill in the art. This is apparent because (1) IPG is *not* requesting that the Court construe any given word or phrase from the claim term; and (2) IPG is using *each and every word* from the claim term in its proposed definition.

By introducing the phrase “to cause it” into its definition, IPG seeks to redefine the claim term from its plain and ordinary meaning. (Knox Decl., Exhibits C, ¶11.) The patent specification does not support such a redefinition for this claim term. Indeed, the word “cause” appears nowhere in Claim 1. Even more tellingly, the word “cause” never appears in the detailed description of the preferred embodiments in the ’630 patent.

Furthermore, the Federal Circuit has cautioned courts that where the proper meaning of a claim term is understandable without explanation, no specialized claim construction is necessary and none should be given:

The Markman decisions do not hold that the trial judge must repeat or restate every claim term in order to comply with the ruling that claim construction is for the court. Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.

United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997). *See also British Telecomms. PLC v. Prodigy Communications Corp.*, 189 F. Supp. 2d 101, 119 (S.D.N.Y. 2002) (Court declines to construe claim language because “[i]t is not a technical term; the simple English words contained in the phrase need no particular defining, and it can be understood without recourse to any other material.”). Where construction is necessary, “[t]he construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.” *Gart*, 254 F.3d at 1339.

In summary, the change of the claim language proposed by IPG is unnecessary and unwarranted and changes the meaning of the claim term from its plain and ordinary meaning.

B. "Mode-converted input beam"

This claim term needs no construction. The plain and ordinary meaning would have been clear to a person of ordinary skill in the art in 1997, and it is clear in the patent that the plain and ordinary meaning is intended to apply. (*See, e.g.*, Col. 6, lines 6-8; Col. 6, lines 33-44; Col. 7, lines 6-14; Col. 10, lines 19-33; Figs. 1, 5-7, and 9-12; Claims 1, 17-19, and 50-51; Knox Decl., Exhibit C, ¶12.)

IPG requests that the Court construe this term to mean:

“an input beam whose mode has been converted to match a fundamental mode of the multi-mode fiber amplifier.”

Once again, it can be seen that IPG’s proposed construction consists of repeating the claim language and adding in new language. Below is IPG’s proposed definition with the words from the claim term itself highlighted:

“an *input beam* whose *mode* has been *converted* to match a fundamental mode of the multi-mode fiber amplifier.”

Thus, through its proposed definition, IPG implicitly concedes that the words of this claim term have plain and ordinary meanings that would have been understood to a person of ordinary skill in the art. Again, IPG is not requesting that the Court construe any given word or phrase from this claim term. Yet again, IPG uses each and every word from the claim term in its proposed definition.

The language of Claim 1 is clear and precise. It is not necessary to add to that definition the further limitation proposed by IPG.

IPG's definition seeks to read concepts into this claim term, such as "to match a fundamental mode," that are addressed in other portions of Claim 1. (Knox Decl., Exhibit C, ¶13.) At best, IPG's proposed definition is redundant and unnecessary. At worst, it changes the meaning of the claim term from its plain and ordinary meaning and adds unwarranted limitations. Thus, for the same reasons provided above for the previous claim term, IPG's proposed definition is improper and should be rejected.

C. "An amplified beam substantially in the fundamental mode"

This claim term needs no construction. The plain and ordinary meaning would have been clear to a person of ordinary skill in the art in 1997, and it is clear in the patent that the plain and ordinary meaning is intended to apply. (*See, e.g.*, Col. 5, lines 19-28; Col. 6, lines 6-17; Col. 6 line 45 - Col. 7, line 46; Col. 8, lines 54-65; Col. 10, lines 1-18; Col. 13, lines 12-25; Col. 14, lines 27-33; Figs. 1-4; Claims 1 and 46-48; Knox Decl., Exhibit C, ¶14.)

IPG requests that the Court construe this term to mean:

"an amplified beam having substantially all of its energy content in the fundamental mode."

Yet again, IPG's proposed construction merely repeats the claim language and adds new limitations. Below is IPG's proposed definition with the words from the claim term itself highlighted:

“an amplified beam having substantially all of its energy content in the fundamental mode.”

Once again, IPG does not challenge that the words of this claim term have plain and ordinary meanings that would have been understood to a person of ordinary skill in the art. Indeed, IPG again uses each and every word from the claim term in its proposed definition.

IPG's proposed definition introduces new limitations that change the meaning from the plain and ordinary meaning of the claim language. (Knox Decl., Exhibit C, ¶15.) For example, IPG's construction changes “substantially” to “substantially *all*.” This change is a transparent attempt on the part of IPG to enhance the amount of the amplified beam that must be in the fundamental mode to satisfy the claim limitation. IPG's proposed enhancement has the effect of narrowing the scope of the claim (i.e. it makes the claim more difficult to infringe), and it comes entirely from IPG and not from the '630 patent. Tellingly, the phrase “substantially all” never appears in the '630 patent claims or patent specification. Indeed, IPG has no basis to overcome the heavy presumption that the plain and ordinary meaning of the claim language applies. *See Phillips*, 415 F.3d at 1312.

Furthermore, IPG's proposal requiring the amplified beam to be substantially all in the fundamental mode is flatly contradicted by the '630 patent specification and the patent claims.

The '630 patent states:

[a]ccording to the present invention, a low level of mode-coupling is desirable, so that the amplified beam provided at the output of the MM fiber amplifier 12 is substantially in the fundamental mode. Accordingly, an M^2 -value less than 10 is desirable, with an M^2 -value less than 4 being preferable, and an M^2 -value less

than 2 being more preferable. Further, the number of modes is preferably in the range of 3 to 3000 and more preferably in the range of 3 to 1000. (Col. 6, lines 6-14.)

A person of ordinary skill in the art would have recognized that an M^2 -value (which characterizes the quality of the amplified beam) in the range of 4 to 10 is inconsistent with IPG's requirement that the amplified beam be substantially *all* in the fundamental mode. Similarly, Claims 46-48 recite embodiments of the invention wherein an M^2 -value of the amplified beam is less than 10, less than 4, and less than 2, respectively. (See Col. 16, lines 18-25.) Since Claims 46-48 depend from Claim 1, they necessarily fall within the scope of Claim 1, and the definition of "an amplified beam substantially in the fundamental mode" from Claim 1 must be broad enough to cover the amplified beams recited in Claims 46-48. Indeed, IPG's own technical expert concedes that a narrow definition for this claim term is inconsistent with these dependent claims. (See Exhibit D (Bucksbaum Invalidity Report) at 11-13.)

There is also no basis in the '630 patent or the applicable legal standards to place any restrictions on the claim term "substantially." The word "substantially" is a term of art used commonly in patent claims in order to avoid strict boundaries to the specified term. See, e.g., *Anchor Wall Systems v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1311 (Fed. Cir. 2003). The term "substantially" is a "meaningful modifier implying 'approximate', rather than 'perfect.'" *Playtex Products, Inc. v. Proctor & Gamble Co.*, 400 F.3d 901, 907 (Fed. Cir. 2005). See also, *Cordis Corp. v. Medtronic Ave. Inc.*, 339 F.3d 1352, 1360 (Fed. Cir. 2003) ("The term 'substantially' . . . denotes 'approximation'".)

In addition, IPG's proposed definition creates additional issues which are unnecessary, such as what is the "energy content" of the beam and what is the scope of "substantially all". The purpose of a *Markman* claim construction hearing is to secure definitive and workable

constructions, and not to create additional issues which are unanswerable – or which may need further analysis and construction.

Because IPG's proposed definition of this claim term is inconsistent with the intrinsic record, and because it changes the meaning of the claim term from its plain and ordinary meaning, it should be rejected.

VII. CONCLUSION

The only term of the '630 patent which needs construction by this Court is the term "mode converter". All of the other terms in the claims have their plain and ordinary meanings as set forth in the patent specification, drawings, and claims. No other terms need construction.

IPG should not be allowed to escape liability for its patent infringement by securing unnecessary and unwarranted limitations added to the claims.

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Dated: December 8, 2009

CERTIFICATE OF SERVICE

I certify that on December 8, 2009, I electronically filed:

PLAINTIFF IMRA AMERICA INC.'S
BRIEF ON CLAIM CONSTRUCTION

using the ECF system which will send notification to the attorneys of record.

A handwritten signature in cursive script, appearing to read "Karen Hopf", is written above a horizontal line.

Karen Hopf